

Notice of Allowability

Application No.

10/771,823

Applicant(s)

LIN ET AL.

Examiner

Mujtaba K. Chaudry

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to interview on 1/18/2007.
2. ☒ The allowed claim(s) is/are 1-30.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 1/18/2007.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Chaudry 1/18/07

ALBERT DECADY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

DETAILED ACTION

Applicants' response to *Exparte Quayle* Action was received December 1, 2006.

- Claims 6 and 25 are amended herein as discussed.
- The corrected oath is accepted.
- Interview summary attached.

Application allowed.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Anthony M. Palagonia on Thursday, January 18, 2007.

Please amend the application as follows:

Please replace claim 6 with:

6. (Currently Amended) The CRC generator/checker of claim 5, wherein:

each multi-byte CRC is adapted to process a different number of bytes of data selected from the series of powers of two bytes in the range $2^{(N-1)}$ to 2^Y where $2^{(N-1)}$ is equal to a number of said CRC circuits in said set of CRC circuits and Y is less than (N-1); and

wherein Y is chosen such the number of concatenated multi-byte CRC calculations performed plus $\{W - [2^{(N-1)} + 2^{(N-2)} + \dots + 2^Y]\}$ concatenated 1-byte CRC calculations can be performed in a single clock cycle and where W is the width in bytes of a data bus supplying said data unit and the number of CRC circuits.

Please replace claim 25 with:

25. (Currently Amended) The method of claim 24, wherein:

each multi-byte CRC is adapted to process a different number of bytes of data selected from the series of powers of two bytes in the range $2^{(N-1)}$ to 2^Y where $2^{(N-1)}$ is equal to a number of said CRC circuits in said set of CRC circuits and Y is less than (N-1); and

further including choosing Y such the number of concatenated multi-byte CRC calculations performed plus $\{W - [2^{(N-1)} + 2^{(N-2)} + \dots + 2^Y]\}$ concatenated 1-byte CRC calculations can be performed in a single clock cycle and where W is the width in bytes of a data bus supplying said data unit and the number of CRC circuits.

REASONS FOR ALLOWANCE

Claims 1-30 are allowed. The following is a statement of reasons for allowance:

Independent claim 1 of the present application teaches a CRC generator/checker for generating CRC results, comprising: a set of CRC circuits connected in series, each CRC circuit responsive to a different control signal generated by a control logic, each CRC circuit having a seed input adapted to receive a seed, a data input adapted to receive and process a different set of M-bits of a data unit and a result output adapted to generate a result, the result output of a previous CRC circuit connected to the seed input of an immediately subsequent CRC circuit, the seed input of a first CRC circuit connected to an output of a remainder register, an input of said remainder register connected to an output of a multiplexer, the result outputs of said set of CRC circuit connected to different inputs of said multiplexer, said multiplexer responsive to a select signal generated by said control logic. The foregoing limitations are not found in the prior arts of record. Particularly, none of the prior arts of record teach nor fairly suggest, "...a set of CRC circuits connected in series, each CRC circuit responsive to a different control signal generated by a control logic, each CRC circuit having a seed input adapted to receive a seed, a data input adapted to receive and process a different set of M-bits of a data unit and *a result output adapted to generate a result, the result output of a previous CRC circuit connected to the seed input of an immediately subsequent CRC circuit, the seed input of a first CRC circuit connected to an output of a remainder register, an input of said remainder register connected to an output of a multiplexer, the result outputs of said set of CRC circuit connected to different inputs of said multiplexer*, said multiplexer responsive to a select signal generated by said control logic."

Art Unit: 2133

Independent claims 12 and 20 recite similar limitations of independent claim 1 and therefore are allowed for similar reasons.


Dependent claims 2-11, 13-19 and 21-30 depend from allowable independent claims and inherently include limitations therein and therefore are allowed as well.

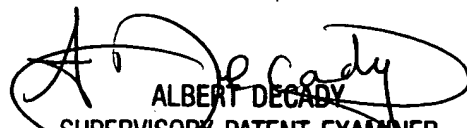
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mujtaba K. Chaudry whose telephone number is 571-272-3817. The examiner can normally be reached on Mon-Thur 9-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on 571-272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Mujtaba Chaudry
Art Unit 2133
January 18, 2007


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